lubricant, and the attendant degradation of power transmission efficiency and lubricant temperature rise described above. Nevertheless, the auxiliary lubrication system may be of value when the lubrication and cooling demands of the gear system exceed the capacity of the primary lubricant circuit. Such capacity exceedance may occur temporarily in an aircraft engine during operation at or near peak power. However, operation at peak power usually occurs only during the relatively brief takeoff and climb segments of an aircraft mission. The longer duration cruise and landing segments of the mission are flown at lower power settings where the primary lubrucation system is more than adequate and the auxiliary system is redundant. Accordingly, it is beneficial to make the auxiliary system selectively operable.

Although the invention has been described with reference to a preferred embodiment thereof, those skilled in the art will appreciate that various changes, modifications and adaptations can be made without departing from the invention as set forth in the accompanying claims.

I claim:

1. A rotary gear train, comprising:

a rotatable sun gear;

a nonrotatable star gear carrier;

a plurality of circumferentially distributed star gears each rotatably mounted on the carrier by a bearing having an interface with its respective star gear and each engaged with the sun gear to define a sun/star mesh;

a rotatable ring gear circumscribing the star gears and engaged with each star gear to define a star/ring mesh;

a set of baffles, each baffle disposed between two star gears; and

a lubricant circuit serving as the exclusive means for supplying lubricant successively to the bearing interfaces, the sun/star mesh and the star/ring mesh.

2. The gear train of claim **1** wherein the lubricant circuit includes a lubricant collector corotatable with the ring gear.

3. The gear train of claim **2** wherein the lubricant circuit also includes a nonrotatable gutter circumscribing the collector.

4. The gear train of claim **1** wherein the carrier comprises a pair of side plates unpenetrated by openings dedicated to the removal of lubricant from the gear train.

5. A rotary gear train, comprising:

a rotatable sun gear;

a nonrotatable star gear carrier;

a plurality of circumferentially distributed star gears each rotatably mounted on the carrier by a bearing having an interface with its respective star gear and each engaged with the sun gear to define a sun/star mesh;

a rotatable ring gear circumscribing the star gears and engaged with each star gear to define a star/ring mesh;

a set of baffles, each baffle disposed between two star gears;

a primary lubricant circuit for supplying primary lubricant successively to the bearing interface, the sun/star mesh and the star/ring mesh; and

an auxiliary lubricant circuit for supplying auxiliary lubricant to the sun/star mesh and the star/ring mesh;

wherein the primary and auxiliary lubricant circuits include a common lubricant discharge path that extends through the sun/star mesh, the common path being the exclusive means for evacuating both the primary lubricant and the auxiliary lubricant.

6. The gear train of claim **5** wherein the common lubricant discharge path also extends through the star/ring mesh.

7. The gear train of claim **5** wherein the common path includes a lubricant collector corotatable with the ring gear.

8. The gear train of claim **7** wherein the common path also includes a nonrotatable gutter circumscribing the collector.

9. The gear train of claim **6** wherein the common path includes a lubricant collector corotatable with the ring gear.

10. The gear train of claim **9** wherein the common path also includes a nonrotatable gutter circumscribing the collector.

11. The gear train of claim **5** wherein the auxiliary lubricant circuit comprises a set of spray bars, each spray bar disposed between two star gears.

12. The gear train of claim **5** wherein the auxiliary lubricant circuit is selectively operable.

13. The gear train of claim **5** wherein the carrier comprises a pair of side plates unpenetrated by openings dedicated to the removal of lubricant from the gear train.

14. A method of lubricating a gear train having a sun gear, a plurality of star gears each rotatably mounted on a carrier by a bearing having an interface with its respective star gear and each engaged with the sun gear to define a sun/star mesh, and a ring gear circumscribing the star gears and engaged with each star gear to define a star/ring mesh, the method comprising:

introducing lubricant into the bearing interface;

discharging the introduced lubricant from the interface;

directing substantially all of the discharged lubricant into the sun/star mesh;

expelling substantially all of the directed lubricant from the sun/star mesh;

guiding substantially all of the expelled lubricant into the star/ring mesh;

ejecting substantially all of the guided lubricant from the star/ring mesh; and

channeling the ejected lubricant away from the gear train.

15. A method of lubricating a gear train having a sun gear, a plurality of star gears each rotatably mounted on a carrier by a bearing having an interface with the star gear and each engaged with the sun gear to define a sun/star mesh, and a ring gear circumscribing the star gears and engaged with each star gear to define a star/ring mesh, the method comprising:

introducing a primary lubricant into the bearing interface;

discharging the introduced primary lubricant from the interface;

concurrently directing substantially all of the discharged first lubricant and an auxiliary lubricant into the sun/star mesh;

expelling substantially all of the directed primary and auxiliary lubricant from the sun/star mesh;

guiding substantially all of the expelled primary and auxiliary lubricant into the star/ring mesh;

ejecting substantially all of the guided primary and auxiliary lubricant from the star/ring mesh; and

channeling the ejected primary and auxiliary lubricant away from the gear train.

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